

WE CLAIM:

1           1. A method of autoclaving a container in which a  
2       shiftable plunger defines a compartment filled with a fluid, the  
3       method comprising the step of:

4           confining the container in a pressurizable chamber;  
5           heating the container in the chamber and thereby  
6       changing a pressure in the compartment of the container;  
7           monitoring the pressure in the compartment of the  
8       container and generating an output corresponding thereto; and  
9           varying pressure in the chamber around the container so  
10      as to be generally equal to the monitored pressure in the  
11      compartment of the container.

1           2. The autoclaving method defined in claim 1 wherein  
2       the pressure is monitored by monitoring movement of the plunger  
3       as the container is heated.

1           3. The autoclaving method defined in claim 2 wherein  
2       the pressure is monitored by a pair of light curtains flanking  
3       the plunger, the pressure in the chamber being increased when the  
4       plunger moves across one of the light curtains and decreased when  
5       the plunger moves across the other of the light curtains.

1           4. The autoclaving method defined in claim 2 wherein  
2       the pressure is monitored by detecting the distance between the  
3       plunger and a fixed sensor.

1           5. The autoclaving method defined in claim 4 wherein  
2       the distance is detected optically or by ultrasound.

1           6. The autoclaving method defined in claim 5 wherein  
2       the distance is detected optically by means of reflection or the  
3       Doppler effect.

1           7. The autoclaving method defined in claim 1 wherein  
2       the pressure is monitored by providing a pressure sensor exposed  
3       to the fluid in the container.

1           8. An apparatus for autoclaving a container in which a  
2       shiftable plunger defines a compartment filled with a fluid, the  
3       apparatus comprising:

4           a pressurizable chamber in which the container is  
5       confined;

6           pump means for pressurizing the chamber;

7           means for heating the container in the chamber and  
8       thereby changing a pressure in the compartment of the container;

9           means including a sensor for monitoring the pressure in  
10      the compartment of the container and generating an output  
11      corresponding thereto; and

12           control means connected to the sensor and to the pump  
13      means for a varying pressure in the chamber around the container  
14      so as to be generally equal to the monitored pressure in the  
15      compartment of the container.

1           9. The autoclaving apparatus defined in claim 8  
2       wherein the sensor monitors movement of the plunger as the  
3       container is heated.

1           10. The autoclaving apparatus defined in claim 9  
2       wherein the sensor includes a pair of light curtains flanking the  
3       plunger, the control means increasing pressure in the chamber  
4       when the plunger moves across one of the light curtains and  
5       decreasing it when the plunger moves across the other of the  
6       light curtains.

1           11. The autoclaving apparatus defined in claim 9  
2       wherein the sensor detects the distance between the plunger and a  
3       fixed sensor.

1           12. The autoclaving apparatus defined in claim 8  
2       wherein the sensor operates optically or by ultrasound.

1           13. The autoclaving apparatus defined in claim 12  
2       wherein the sensor operates optically by means of reflection or  
3       the Doppler effect.

1           14. The autoclaving apparatus defined in claim 8  
2       wherein the sensor is exposed to the fluid in the container.

1                   15. The autoclaving apparatus defined in claim 14  
2        wherein the container has a wall and the sensor projects through  
3        the wall.

1                   16. The autoclaving apparatus defined in claim 14  
2        wherein the container is a syringe having a tip cap and the  
3        sensor projects through the tip cap.